

# PATENT ABSTRACTS OF JAPAN

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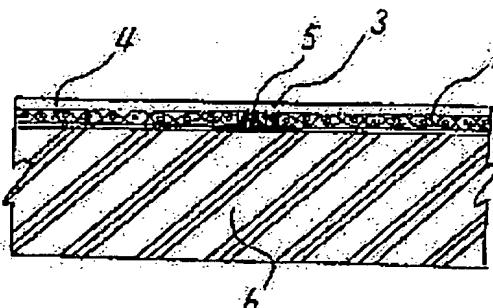
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## (54) WATERPROOFING METHOD USING FABRIC TYPE PERFORATED SHEET

### (57) Abstract:

**PROBLEM TO BE SOLVED:** To provide a waterproofing method using a fabric type perforated sheet capable of improving waterproof property, of reducing material and work costs and of simplifying work on the job site.

**SOLUTION:** A fabric type perforated sheet 1 with holes each having a diameter of 1.2 mm to 15 mm at the intervals of 3 mm to 100 mm in the fabrics or this fabric type perforated sheet 1 is immersed in or coated with a solution mixed with vinyl acetate and corn starch, and the impregnated and hardened fabric type perforated sheet 1 is laid on a waterproof work surface, an adhesive is coated to a hole portion of the fabric type perforated sheet, an adhesive 5 is flowed from the portion of the perforation 3, only the vicinity of the perforation portion of the fabric type perforated sheet 1 is spot-bonded to the backing surface 6 of the waterproofing work, thereafter, a waterproof material 4 is applied to the surface of the fabric type perforated sheet 1.



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**DETAILED DESCRIPTION**

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the waterproofing method using the textile type hole aperture sheet which carried out \*\*\*\* hardening with the textile type hole aperture sheet or acetic-acid vinyl used for the roof of a building, a wall, the roof, a balcony, a floor, etc., and corn starch.

[0002]

[Description of the Prior Art] The tarpaulin is laid in order to prevent permeation of the storm sewage to the interior of a room to the waterproofing construction side of the substrate of the roof of a building, the roof, a balcony, a floor, etc. conventionally.

[0003] When such a tarpaulin was used, struck the tarpaulin against the substrate with fixed means, such as a direct rivet and a tacker, in the waterproofing construction side, and construction immobilization was carried out, and the inferior surface of tongue of a tarpaulin was made to rival with adhesives, and construction immobilization was carried out.

[0004] However, when a tarpaulin was fixed using fixed means, such as a rivet and a tacker, the fixed means was exposed to the method of outside, storm sewage permeated from punching of a rivet or a tacker conjointly with the fixed means having reached even the substrate further, and leak in the roof might be caused.

[0005] Moreover, the adhesives spreading activity in a construction site took skill to sticking the whole rear face of a tarpaulin with adhesives, and since time and effort was taken, it caused a cost rise.

[0006] The whole rear face of a tarpaulin is stuck on a waterproofing construction side with adhesives, when a crack arises to concrete etc. in respect of waterproofing construction in the waterproofing method which applies a water blocking material on it, a crack will go into a tarpaulin pan also at the water resistant layer currently constructed on it, and permeation of storm sewage will be produced.

[0007] Although only the end of the point flare method of construction which carries out partial adhesion besides the complete adhesion method of construction of a tarpaulin in a sheet waterproofing method, and other water resistant layers was pasted up on the substrate, it floated and there were a flare method of construction, a loose laying method, etc., all had to install the degassing board for degassing, were not able to require time and effort for site operation, and were not able to aim at a cost cut. It is the moisture to which there is a big problem of "the blister of a water resistant layer" in waterproofing methods, such as bituminous membrane waterproofing, sheet-applied membrane waterproofing, and liquid-applied membrane waterproofing, and it remains on the substrate that it is the cause of this "blister of a water resistant layer." Since the moisture which remains on the substrate was heated by solar heat and served as an expansion steam, degassing was needed.

[0008] Although the tarpaulin of a hole aperture is in an asphalt tarpaulin, this purpose is a hole aiming at the so-called degassing which extracts air. In order to make an asphalt waterproofing method into impasto, the bank of air becomes being able to be easy to do the big cause of the blister of an asphalt water resistant layer, or degradation. The crack of substrates, such as concrete, makes it a crack produced also to an asphalt water resistant layer. Therefore, the hole of degassing for extracting air is needed and it completely differs from the purpose of this invention. The air to which

it can flow freely in the case of this invention, and air is flowing freely between a textile type hole aperture sheet and waterproofing substrate sides is frequenting the exterior and freedom from the vent prepared in the surrounding wall side. Therefore, the waterproofing method which becomes this invention is a waterproofing method air may be conversely contained completely unlike the conventional waterproofing method which had to intercept air.

[0009]

[Problem(s) to be Solved by the Invention] This invention was made in view of this situation, aims at waterproof improvement and reduction of an ingredient or activity cost, and aims at offering the waterproofing method using the textile type hole aperture sheet which dips, or applies and carried out \*\*\*\* hardening to the mixed solution of the textile type hole aperture sheet or acetic-acid vinyl which can simplify a field work, and corn starch.

[0010]

[Means for Solving the Problem] The textile type hole aperture sheet which carried out \*\*\*\* hardening of the textile type hole aperture sheet which made the hole with a diameter of 1.2-15mm in the textiles of the various quality of the materials at intervals of 3-100mm in order to attain that purpose, or this textile type hole aperture sheet with acetic-acid vinyl and corn starch is produced. It is the waterproofing method which lays this to a waterproofing construction side, applies adhesives to the part of the hole of a textile type hole aperture sheet, and slush adhesives from the part of a hole, and a waterproofing construction substrate side is made to carry out point junction only of the hole part circumference of a textile type hole aperture sheet, and applies a water blocking material to a textile type hole aperture sheet surface after an appropriate time.

[0011]

[Embodiment of the Invention] According to the waterproofing method using the textile type hole aperture sheet which dipped or applied and the mixed solution of the textile type hole aperture sheet or acetic-acid vinyl by this invention, and corn starch was made to carry out \*\*\*\* hardening, even if a crack goes into a waterproofing construction side, a textile type hole aperture sheet does not produce damage on the textile type hole aperture sheet itself only by the point junction part of the crack partial circumference exfoliating. It is because point junction to which a textile type hole aperture sheet is laid to a waterproofing construction side, adhesives are applied to the part of the hole of a textile type hole aperture sheet, and the hole part circumference is pasted up on a substrate is carried out. Waterproofing construction can be ensured [ easily and ] by applying a paint film water blocking material to the top face of this textile type hole aperture sheet.

[0012] The textiles used for a textile type hole aperture sheet have abrasion resistance and impact strength, must be what was excellent in tensile strength, tearing strength, etc., must have alkali-proof, acid-proof, and organic solvent-proof nature, and must be chemically stable. Moreover the permeability of gas and moisture is small, and if it is not the thing excellent in weatherability, it will not become. As long as it can fulfill these conditions, any, such as a regenerated fiber whose natural fiber is a \*\*\*\*\* chemical fiber of course, a semi-synthetic fiber, a synthetic fiber, and an inorganic fiber, are sufficient as the quality of the material of the textiles of a textile type hole aperture sheet.

[0013] In the case of a natural fiber, the textiles which used fiber, such as hemp, cotton, wool, silk, and wood, can be used. There are a regenerated fiber, a semi-synthetic fiber, a synthetic fiber, an inorganic fiber, etc. in a chemical fiber, and the textiles which used fiber, such as viscose rayon of a cellulose system and cuprammonium rayon, and the textiles using the fiber of a protein system can be used in a regenerated fiber. In a semi-synthetic fiber, the textiles which used fiber, such as acetate of a cellulose system and a fibrous acetylated fiber, can be used. In a synthetic fiber, the textiles which used the nylon of the Vynylon fiber of a polyvinylalcohol fiber and a polyamide fiber, the vinylidene fiber of a polyvinylidene chloride fiber, vinyl chloride system fiber, acrylic nitril system fiber, polyester fiber, polyurethane system fiber, polyethylene system fiber, polypropylene system fiber, polystyrene system fiber, the Teflon fiber of polytetrafluoroethylene system fiber, polyurea system fiber, polyvinylidene cyanide system fiber, an aramid fiber, etc. can be used. In an inorganic fiber, the textiles which used a metal fiber, a glass fiber, a rock fiber, slag fiber, etc. can be used.

[0014] The textiles used for a textile type hole aperture sheet are constituted by combination with warp and the weft, and the histogen which combines and turns into a fundamental organization of the direction is plain weave, twill weave, satin, etc. A hole can be automatically made in the process in

which textiles are woven beforehand in the case of this invention, and the water blocking material applied to this top face can prevent permeating from texture by weaving parts other than a hole densely. That is, the surface width of face and weave of the strand of textiles can adjust the clearance between textiles, and formation of a hole to arbitration. When using established textiles, the hole of a dimension predetermined at predetermined spacing can be used making it mechanically.

[0015] It is necessary to make perfect waterproof nature and rigidity give textiles depending on the scale of a waterproofing construction part or a location, and other construction conditions. The textile type hole aperture sheet which dips, or applies and carried out \*\*\*\* hardening is used for the solution which mixed acetic-acid vinyl and corn starch for the textiles which made the hole of a predetermined dimension in predetermined spacing for this reason at a fixed rate.

[0016] The range of 0.2-2.0mm can use suitably the thickness of the textiles used for a textile type hole aperture sheet. The range of 1.2-15mm is suitable for the magnitude of the hole made in the field of textiles. It does not flow in enough, but the adhesive joint to a waterproofing construction side is inadequate, and adhesives exfoliate easily, and the adhesive strength around a hole becomes large, the partial elongation force of a textile type hole aperture sheet becomes strong, and it becomes impossible to stick a textile type hole aperture sheet on homogeneity in a big hole 15mm or more in 1.2mm or less.

[0017] Although the magnitude of a hole, the thickness of a textile type hole aperture sheet, the quality of the material, etc. must determine spacing of the hole made in the textiles of a textile type hole aperture sheet, the range of 3-100mm is suitable for it. In 3mm or less, spacing is too narrow not much and construction also takes time and effort. It is because spacing is too large not much and the effectiveness of point junction decreases in 100mm or more. Arrangement of a hole may be put in order in a grid pattern, and may be put in order alternately.

[0018] Although the adhesives which lay a textile type hole aperture sheet to a waterproofing construction side, and are applied to the part of a hole are determined by the quality of the material of a textile type hole aperture sheet etc., an emulsion mold vinyl-acetate-resin system, an emulsion mold vinyl copolymer system, a latex former rubber system, a latex former epoxy denaturation rubber system, an epoxy resin system, an urethane system, etc. can be used for them.

[0019] The base material equivalent nonflammable paint film water blocking material with which the paint film water blocking material which carries out waterproofing construction on the top face of a textile type hole aperture sheet received qualification of the Ministry of Construction although acrylic, the urethane system, the ethylene-vinyl acetate copolymer system, the chloroprene system, etc. were used is more suitable. The paint film water blocking material which carries out waterproofing construction applied adhesives upwards, applied the primer, applied the middle coat upwards one to twice, and applies the topcoat of finishing.

[0020]

[Example] The example of this invention is explained below.

[0021] Example 1 When a histogen consisted of plain weaves and wove in the style of Nitto using the yarn of polyester fiber, places other than a hole produced the textile type hole aperture sheet with a thickness of 1.2mm which does not let a water blocking material pass and made it thin by weaving densely by making a hole with a diameter of 3mm at intervals of 5mm each of every direction automatically.

[0022] Epoxy resin adhesive (product made from trade name "tile MENTO EP-900" tile MENTO) was applied to the part of the hole of a textile type hole aperture sheet in the substrate concrete-finish side, and attachment junction of the part of the hole of a textile type hole aperture sheet was carried out in the substrate concrete-finish side.

[0023] The primer, the middle coat, and topcoat of a base material equivalent nonflammable emulsion mold acrylic paint film water blocking material (product made from trade name "RIBORU my tee" RIBORU) were applied for the top face of a textile type hole aperture sheet once [ every ] each, and waterproofing construction was performed. After an appropriate time, all over the substrate concrete-finish side, although the crack with an artificial width of face of 1mm was produced, one hole junction part of the textile type hole aperture sheet of the crack circumference exfoliated, damage was not looked at at all by the textile type hole aperture sheet by request, and abnormalities were not produced in a water resistant layer, either.

[0024] Example 2 The textile type hole aperture sheet of the plain weave with a thickness of 1.0mm with which every direction formed the hole of the square of 3mm of every direction using 5mm broad yarn by the polyester fiber used in the example 1 was produced. All clearances other than this textile type hole aperture sheet broad yarn constitute the hole. It was able to construct by the same waterproofing method as an example 1 using this textile type hole aperture sheet, and the same result as an example 1 was able to be obtained.

[0025] Example 3 The histogen dipped in the \*\*\*\*\* solution a little the corn-starch 15-weight section of marketing of the hemp sack which is the fiber textiles of the hemp which consisted of plain weave in the commercial acetic-acid vinyl emulsion 100 weight section, and other additives, and carried out \*\*\*\* hardening. Since the clearance of a hemp sack is comparatively large, it has a hole in the part of arbitration, and by dipping in this solution, only a big opening remains as a hole, texture is closed and, as for other parts, as for a water blocking material, \*\*\*\* becomes that there is nothing. It was able to construct by the same waterproofing method as an example 1 using this textile type hole aperture sheet, and the same result as an example 1 was able to be obtained.

[0026]

[Effect of the Invention] Like the above, the waterproofing method which used the textile type hole aperture sheet concerning this invention could simplify the field work sharply, and was able to raise flattery nature with a construction substrate side sharply in the advanced waterproofing engine performance and a list with \*\* which can aim at reduction of an ingredient or activity cost.

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CLAIMS

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[Claim(s)]

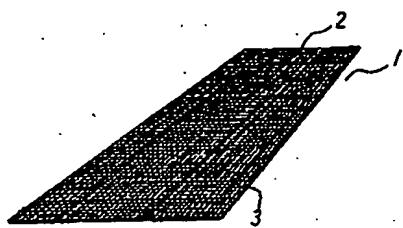
[Claim 1] The waterproofing method which the textile type hole aperture sheet which made the hole with a diameter of 1.2-15mm at intervals of 3-100mm is laid to a waterproofing construction side, it comes to textiles, adhesives are applied to the part of the hole of a textile type hole aperture sheet, adhesives are slushed from a part for a hole, and only the hole part circumference of a textile type hole aperture sheet carries out point junction in a waterproofing construction side, and is characterized by to apply a water blocking material to a textile type hole aperture sheet front face after an appropriate time.

[Claim 2] The waterproofing method according to claim 1 characterized by using the thing which it dipped or applied [ thing ] and made the mixed solution of acetic-acid vinyl and corn starch carry out \*\*\*\* hardening of the textile type hole aperture sheet which made the hole with a diameter of 1.2-15mm in textiles at intervals of 3-100mm.

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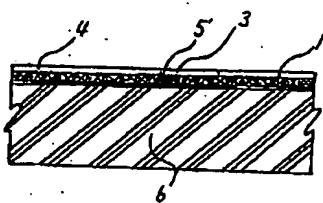
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